

6 logical state in which data may pass between the first functional block and the
7 second functional block;

8 a communication medium configured to carry a plurality of signals,
9 wherein the plurality of signals comprises a connection identifier that identifies a
10 particular connection that a data transfer is part of;

11 an initiator interface module coupled to the initiator functional block and
12 to the communication medium to transfer data between the initiator functional
13 block and the communication medium, ^{initiator interface} said module mapping the connection
14 identifier to a thread identifier that indicates a transaction stream the data the
15 data transfer is part of, the thread identifier communicated between the initiator
16 interface module and initiator functional block ;

17 a target interface module coupled to the target functional block and to the
18 communication medium to transfer data between the target functional block and
19 the communication medium, ^{target interface} said module mapping the connection identifier to a
20 thread identifier that indicates a transaction stream the data the data transfer is
21 part of, the thread identifier communicated between the target interface module
22 and target functional block ;

23 the connection identifier sent with a transfer request from the initiator
24 interface module to the target interface module and sent with data transfers
25 between the target interface module and the initiator interface module.

1 2. (amended) The communication of claim 1, further comprising at
2 least one bus, each bus coupling an interface module to its associated functional
3 block, the bus comprising a plurality of signal lines, wherein the thread identifier
4 is communicated across at least one of the plurality of signal lines [comprises a

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end 5 thread identifier (ID) that indicates a transaction stream that the data transfer is
6 part of].

4 (amended) A communication system comprising:
2 at least two functional blocks, wherein a first functional block
3 communicates with a second functional block by establishing a connection,
4 wherein a connection is a logical state in which data may pass between the first
5 functional block and the second functional block; and
6 a communication medium configured to carry a plurality of signals
7 between interface modules;
8 an initiator functional block configured to send transfer requests;
9 an initiator interface module coupled to the initiator functional block and
B2 10 to the communication medium;
11 a target functional block that responds to transfer requests;
12 a target interface module coupled to the target functional block and to the
13 communication medium;
14 a connection identifier configured to be sent with a transfer request from
15 the initiator interface module to the target interface module, the connection
16 identifier comprising a multi-bit value that encodes information including a
17 transfer priority, a transfer order, and a functional block that originated the
18 transfer, the connection identifier is one of a plurality of connection identifiers
19 associated with the initiator functional block and is mapped to a thread identifier
20 by the initiator interface module.
